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Sequence Listing was accepted.

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Timestamp: [year=2009; month=11; day=6; hr=7; min=41; sec=47; ms=724; ]

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Application No: 10531662 Version No: 5.0

Input Set:

Output Set:

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Finished: 2009-11-04 14:37:30.838  
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Total Errors: 0  
No. of SeqIDs Defined: 34  
Actual SeqID Count: 34

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| W 213      | Artificial or Unknown found in <213> in SEQ ID (2) |
| W 213      | Artificial or Unknown found in <213> in SEQ ID (3) |

SEQUENCE LISTING

<110> RATCLIFFE, PETER J.  
PUGH, CHRISTOPHER W.  
SCHOFIELD, CHRISTOPHER J.  
HEWITSON, KIRSTY S.

<120> HYDROXYLASES AND MODULATORS THEREOF

<130> 06843-0091

<140> 10531662

<141> 2005-10-21

<150> PCT/GB2003/004492

<151> 2003-10-16

<150> GB 0224102.4

<151> 2002-10-16

<150> GB 0226598.1

<151> 2002-11-14

<160> 34

<170> PatentIn Ver. 3.3

<210> 1

<211> 14

<212> PRT

<213> Artificial sequence

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<223> Synthetic peptide

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Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu

1 5 10

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<211> 8

<212> PRT

<213> Artificial sequence

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<223> Synthetic peptide

<400> 2

Gln Leu Thr Ser Tyr Asp Cys Glu

1 5

<210> 3  
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 <213> Artificial sequence  
  
 <220>  
 <223> Synthetic peptide  
  
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Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Xaa  
 1 5 10 15

Ala

<210> 4  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 4

Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys Arg Gly Trp Gly  
 1 5 10 15

Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu Gly Asn Val Thr  
 20 25 30

Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala Gln Ile Lys Gly  
 35 40 45

Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp  
 50 55

<210> 5  
 <211> 16  
 <212> PRT  
 <213> Drosophila melanogaster  
  
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Glu Leu Ala Ala Asp Leu Arg Val Ser Asp Leu Asp Phe Ala Gln Gln  
 1 5 10 15

<210> 6  
<211> 42  
<212> PRT  
<213> *Drosophila melanogaster*

<400> 6

Pro Pro Asp Ala Val Asn Phe Trp Leu Gly Asp Glu Arg Ala Val Thr  
1 5 10 15

Ser Met His Lys Asp Pro Tyr Glu Asn Val Tyr Cys Val Ile Ser Gly  
20 25 30

His Lys Asp Phe Val Leu Ile Pro Pro His  
35 40

<210> 7  
<211> 14  
<212> PRT  
<213> *Drosophila melanogaster*

<400> 7

Ala Leu Lys Glu Asp Ile Ser Ile Pro Asp Tyr Cys Thr Ile  
1 5 10

<210> 8  
<211> 43  
<212> PRT  
<213> *Drosophila melanogaster*

<400> 8

Pro Gly Ala Val Asp Ile Lys Ala Trp Leu Gly Pro Ala Gly Thr Val  
1 5 10 15

Ser Pro Met His Tyr Asp Pro Lys His Asn Leu Leu Cys Gln Val Phe  
20 25 30

Gly Ser Lys Arg Ile Ile Leu Ala Ala Pro Ala  
35 40

<210> 9  
<211> 17  
<212> PRT  
<213> *Homo sapiens*

<400> 9

Lys Ile Val Arg Lys Leu Ser Trp Val Glu Asn Leu Trp Pro Glu Glu  
1 5 10 15

Cys

<210> 10  
<211> 44  
<212> PRT  
<213> Homo sapiens

<400> 10

Pro Asn Val Gln Lys Tyr Cys Leu Met Ser Val Arg Asp Ser Tyr Thr  
1 5 10 15

Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Val Leu  
20 25 30

Lys Gly Glu Lys Ile Phe Tyr Leu Ile Arg Pro Thr  
35 40

<210> 11  
<211> 16  
<212> PRT  
<213> Caenorhabditis elegans

<400> 11

Arg Phe Val Gln Glu Ile Ser Met Val Asn Arg Leu Trp Pro Asp Val  
1 5 10 15

<210> 12  
<211> 44  
<212> PRT  
<213> Caenorhabditis elegans

<400> 12

Pro Lys Val Glu Gln Phe Cys Leu Ala Gly Met Ala Gly Ser Tyr Thr  
1 5 10 15

Asp Phe His Val Asp Phe Gly Gly Ser Ser Val Tyr Tyr His Ile Leu  
20 25 30

Lys Gly Glu Lys Ile Phe Tyr Ile Ala Ala Pro Thr  
35 40

<210> 13  
<211> 16  
<212> PRT  
<213> *Caenorhabditis elegans*

<400> 13

Arg Phe Val Gln Asp Ile Ser Met Ala Lys Arg Leu Trp Ser Asp Val  
1 5 10 15

<210> 14  
<211> 44  
<212> PRT  
<213> *Caenorhabditis elegans*

<400> 14

Pro Lys Ile Glu Gln Ile Cys Ala Ala Ala Met Ala Asn Ser Tyr Thr  
1 5 10 15

Asp Phe His Val Asp Phe Gly Gly Thr Ser Val Tyr Phe His Val Phe  
20 25 30

Lys Gly Glu Lys Ile Phe Tyr Ile Ala Ala Pro Thr  
35 40

<210> 15  
<211> 9  
<212> PRT  
<213> *Caenorhabditis elegans*

<400> 15

Lys Ile Phe Tyr Ile Ala Ala Pro Thr  
1 5

<210> 16  
<211> 16  
<212> PRT  
<213> *Drosophila melanogaster*

<400> 16

Glu Ile Val Arg Gln Ile Asp Trp Val Asp Val Val Trp Pro Lys Gln  
1 5 10 15

<210> 17  
<211> 44  
<212> PRT  
<213> *Drosophila melanogaster*

<400> 17

Pro Lys Val Gln Lys Tyr Cys Leu Met Ser Val Lys Asn Cys Tyr Thr  
1 5 10 15

Asp Phe His Ile Asp Phe Gly Gly Thr Ser Val Trp Tyr His Ile Leu  
20 25 30

Arg Gly Ser Lys Val Phe Trp Leu Ile Pro Pro Thr  
35 40

<210> 18

<211> 9

<212> PRT

<213> *Drosophila melanogaster*

<400> 18

Lys Val Phe Trp Leu Ile Pro Pro Thr  
1 5

<210> 19

<211> 18

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 19

Gln Asn Asp Leu Val Asp Lys Ile Trp Ser Phe Asn Gly His Leu Glu  
1 5 10 15

Lys Val

<210> 20

<211> 44

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 20

Pro Lys Val Thr Lys Tyr Ile Leu Met Ser Val Lys Asp Ala Tyr Thr  
1 5 10 15

Asp Phe His Leu Asp Phe Ala Gly Thr Ser Val Tyr Tyr Asn Val Ile  
20 25 30

Ser Gly Gln Lys Lys Phe Leu Leu Phe Pro Pro Thr  
35 40



<210> 21  
<211> 61  
<212> PRT  
<213> Rattus norvegicus

<400> 21

Lys Thr Asp Val Phe Gln Glu Val Met Trp Ser Asp Phe Gly Phe Pro  
1 5 10 15

Gly Arg Asn Gly Gln Glu Ser Thr Leu Trp Ile Gly Ser Leu Gly Ala  
20 25 30

His Thr Pro Cys His Leu Asp Ser Tyr Gly Cys Asn Leu Val Phe Gln  
35 40 45

Val Gln Gly Arg Lys Arg Trp His Leu Phe Pro Pro Glu  
50 55 60

<210> 22  
<211> 57  
<212> PRT  
<213> Caenorhabditis elegans

<400> 22

Phe Glu Asp Asp Leu Phe His Tyr Ala Asp Asp Lys Lys Arg Pro Pro  
1 5 10 15

His Arg Trp Phe Val Met Gly Pro Ala Arg Ser Gly Thr Ala Ile His  
20 25 30

Ile Asp Pro Leu Gly Thr Ser Ala Trp Asn Ser Leu Leu Gln Gly His  
35 40 45

Lys Arg Trp Val Leu Ile Pro Pro Ile  
50 55

<210> 23  
<211> 60  
<212> PRT  
<213> Drosophila melanogaster

<400> 23

Thr Ile Leu Asp Tyr Val Asn Lys Asp Tyr Asn Ile Gln Ile Asp Gly  
1 5 10 15

Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Ala Pro Lys Thr Trp Tyr Val Val Pro Pro Glu  
50 55 60

<210> 24  
<211> 60  
<212> PRT  
<213> Homo sapiens

<400> 24

Thr Val Leu Asp Val Val Glu Glu Glu Cys Gly Ile Ser Ile Glu Gly  
1 5 10 15

Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Thr Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Glu Pro Lys Ser Trp Tyr Ala Ile Pro Pro Glu  
50 55 60

<210> 25  
<211> 56  
<212> PRT  
<213> Caenorhabditis elegans

<400> 25

Thr Ile Leu Glu Asp Thr Asn Tyr Glu Ile Lys Gly Val Asn Thr Val  
1 5 10 15

Tyr Leu Tyr Phe Gly Met Tyr Lys Thr Thr Phe Pro Trp His Ala Glu  
20 25 30

Asp Met Asp Leu Tyr Ser Ile Asn Phe Leu His Phe Gly Ala Pro Lys  
35 40 45

Tyr Trp Phe Ala Ile Ser Ser Glu

50

55

&lt;210&gt; 26

&lt;211&gt; 60

&lt;212&gt; PRT

<213> *Drosophila melanogaster*

&lt;400&gt; 26

Thr Ile Leu Asn Leu Val Asn Thr Asp Tyr Asn Ile Ile Ile Asp Gly  
1 5 10 15

Val Asn Thr Ala Tyr Leu Tyr Phe Gly Met Trp Lys Ser Ser Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Ala Pro Lys Thr Trp Tyr Ala Ile Pro Pro Ala  
50 55 60

&lt;210&gt; 27

&lt;211&gt; 60

&lt;212&gt; PRT

<213> *Homo sapiens*

&lt;400&gt; 27

Thr Ile Leu Asp Leu Val Glu Lys Glu Ser Gly Ile Thr Ile Glu Gly  
1 5 10 15

Val Asn Thr Pro Tyr Leu Tyr Phe Gly Met Trp Lys Thr Ser Phe Ala  
20 25 30

Trp His Thr Glu Asp Met Asp Leu Tyr Ser Ile Asn Tyr Leu His Phe  
35 40 45

Gly Glu Pro Arg Ser Trp Tyr Ser Val Pro Pro Glu  
50 55 60

&lt;210&gt; 28

&lt;211&gt; 58

&lt;212&gt; PRT

<213> *Drosophila melanogaster*

&lt;400&gt; 28

Phe Ala Ser Asp Trp Leu Asn Glu Gln Leu Ile Gln Gln Gly Lys Asp

|   |   |    |    |
|---|---|----|----|
| 1 | 5 | 10 | 15 |
|---|---|----|----|

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Tyr | Arg | Phe | Val | Tyr | Met | Gly | Pro | Lys | Asn | Ser | Trp | Thr | Ser | Tyr |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ala | Asp | Val | Phe | Gly | Ser | Phe | Ser | Trp | Ser | Thr | Asn | Ile | Val | Gly |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

  

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Lys | Lys | Trp | Leu | Ile | Met | Pro | Pro | Gly |
| 50  |     |     |     |     |     | 55  |     |     |     |

  

<210> 29

<211> 57

<212> PRT

<213> Schizosaccharomyces pombe

  

<400> 29

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ala | Asp | Asp | Trp | Leu | Asn | Ala | Tyr | Val | Ile | Asp | Cys | Glu | Ser | Asp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Phe | Arg | Phe | Ala | Tyr | Leu | Gly | Ser | His | Leu | Thr | Thr | Thr | Gly | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Asp | Tyr | Ala | Ser | His | Ser | Phe | Ser | Val | Asn | Leu | Cys | Gly | Val |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

  

|     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Cys | Trp | Leu | Phe | Ile | Asp | Pro | Lys |
| 50  |     |     |     |     |     | 55  |     |     |

  

<210> 30

<211> 349

<212> PRT

<213> Homo sapiens

  

<400> 30

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Ala | Thr | Ala | Ala | Glu | Ala | Val | Ala | Ser | Gly | Ser | Gly | Glu | Pro |
| 1   |     |     |     | 5   |     |     |     |     | 10  |     |     |     |     | 15  |     |

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Glu | Glu | Ala | Gly | Ala | Leu | Gly | Pro | Ala | Trp | Asp | Glu | Ser | Gln | Leu |
|     |     |     | 20  |     |     |     |     | 25  |     |     |     |     | 30  |     |     |

  

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ser | Tyr | Ser | Phe | Pro | Thr | Arg | Pro | Ile | Pro | Arg | Leu | Ser | Gln | Ser |
|     |     | 35  |     |     |     |     | 40  |     |     |     |     | 45  |     |     |     |

Asp Pro Arg Ala Glu Glu Leu Ile Glu Asn Glu Glu Pro Val Val Leu  
50 55 60

Thr Asp Thr Asn Leu Val Tyr Pro Ala Leu Lys Trp Asp Leu Glu Tyr  
65 70 75 80

Leu Gln Glu Asn Ile Gly Asn Gly Asp Phe Ser Val Tyr Ser Ala Ser  
85 90 95

Thr His Lys Phe Leu Tyr Tyr Asp Glu Lys Lys Met Ala Asn Phe Gln  
100 105 110

Asn Phe Lys Pro Arg Ser Asn Arg Glu Glu Met Lys Phe His Glu Phe  
115 120 125

Val Glu Lys Leu Gln Asp Ile Gln Gln Arg Gly Gly Glu Glu Arg Leu  
130 135 140

Tyr Leu Gln Gln Thr Leu Asn Asp Thr Val Gly Arg Lys Ile Val Met  
145 150 155 160

Asp Phe Leu Gly Phe Asn Trp Asn Trp Ile Asn Lys Gln Gln Gly Lys  
165 170 175

Arg Gly Trp Gly Gln Leu Thr Ser Asn Leu Leu Leu Ile Gly Met Glu  
180 185 190

Gly Asn Val Thr Pro Ala His Tyr Asp Glu Gln Gln Asn Phe Phe Ala  
195 200 205

Gln Ile Lys Gly Tyr Lys Arg Cys Ile Leu Phe Pro Pro Asp Gln Phe  
210 215 220

Glu Cys Leu Tyr Pro Tyr Pro Val His His Pro Cys Asp Arg Gln Ser  
225 230 235 240

Gln Val Asp Phe Asp Asn Pro Asp Tyr Glu Arg Phe Pro Asn Phe Gln  
245 250 255

Asn Val Val Gly Tyr Glu Thr Val Val Gly Pro Gly Asp Val Leu Tyr  
260 265 270

Ile Pro Met Tyr Trp Trp His His Ile Glu Ser Leu Leu Asn Gly Gly

275

280

285

Ile Thr Ile Thr Val Asn Phe Trp Tyr Lys Gly Ala Pro Thr Pro Lys  
290 295 300

Arg Ile Glu Tyr Pro Leu Lys Ala His Gln Lys Val Ala Ile Met Arg  
305 310 315 320

Asn Ile Glu Lys Met Leu Gly Glu Ala Leu Gly Asn Pro Gln Glu Val  
325 330 335

Gly Pro Leu Leu Asn Thr Met Ile Lys Gly Arg Tyr Asn  
340 345

&lt;210&gt; 31

&lt;211&gt; 41

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 31

Ser Met Asp Glu Ser Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu  
1 5 10 15

Val Asn Ala Pro Ile Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu  
20 25 30

Leu Leu Arg Ala Leu Asp Gln Val Asn  
35 40

&lt;210&gt; 32

&lt;211&gt; 52

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

Pro Ser Asp Leu Ala Cys Arg Leu Leu Gly Gln Ser Met Asp Glu Ser  
1 5 10 15

Gly Leu Pro Gln Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile  
20 25 30

Gln Gly Ser Arg Asn Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu  
35 40 45

Asp Gln Val Asn  
50

<210> 33  
<211> 12  
<212> PRT  
<213> Homo sapiens

<400> 33  
Leu Thr Ser Tyr Asp Cys Glu Val Asn Ala Pro Ile  
1 5 10

<210> 34  
<211> 12  
<212> PRT  
<213> Homo sapiens

<400> 34  
Leu Leu Gln Gly Glu Glu Leu Leu Arg Ala Leu Asp  
1 5 10